

Carbon Nanotube-Based Adsorbents for Ultrafine Particulate and Volatile Air Contaminants, Phase I

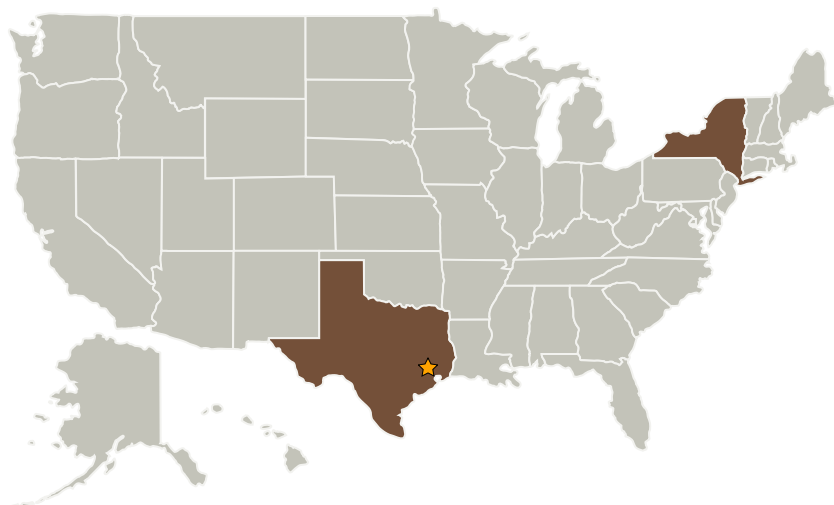
Completed Technology Project (2006 - 2007)



Project Introduction

While the protective qualities of activated carbon have been enhanced by the addition of specific metal salts, activated carbon technology has changed little over the last 60 years. In this Phase I, Agave BioSystems and the Universities Space Research Association, propose to develop next generation smart adsorbents using novel carbon nanotube (CNT)-based structures for the adsorption and destruction of potentially toxic air contaminants. Since CNTs have extremely high surface area, can be readily modified with metals or functional groups, and can function without the mass transfer limitations of traditional activated carbon, they are an ideal material for integration into spacecraft air handling systems. Our goal is to build upon the unique structural and chemical nature of carbon nanotubes to generate a new generation of smart adsorbents. The exceptionally high mass transfer properties of these in situ grown carbon nanotubes should reduce problems of current filters such as pore clogging or limited accessible material.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Johnson Space Center(JSC)	Lead Organization	NASA Center	Houston, Texas
Agave BioSystems, Inc.	Supporting Organization	Industry	Ithaca, New York



Carbon Nanotube-Based Adsorbents for Ultrafine Particulate and Volatile Air Contaminants, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Johnson Space Center (JSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Carbon Nanotube-Based Adsorbents for Ultrafine Particulate and Volatile Air Contaminants, Phase I

Completed Technology Project (2006 - 2007)



Primary U.S. Work Locations

New York

Texas

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
 - └ TX06.1.1 Atmosphere Revitalization